

**Practice: 490 - Tree & Shrub Site Preparation****Scenario # 1    Chemical Application****Scenario Description:****Missouri**

This practice involves the use of various herbicides applied using ground-based machinery in order to remove undesirable vegetation and improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestland that was recently harvested. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. Additional associated practices may include: 612 Tree and Shrub Establishment, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before Practice Situation:**

Undesirable vegetation is present on the site including herbaceous plants and woody vegetation. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs.

**After Practice Situation:**

Undesirable vegetation has been treated using appropriate herbicides, reducing competition for target trees and/or shrubs. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

**Scenario Feature Measure:**

Area of Treatment

**Scenario Typical Size:**

40

Acre

Tot Unit Cost

\$49.50

Cost Category		Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Herbicide, Glyphosate		40	Acre	\$11.04	\$441.60
Materials	Herbicide, Sulfometuron & metsulfuron		40	Acre	\$22.78	\$911.20
Materials	Herbicide, Surfactant		40	Acre	\$1.09	\$43.60
Equip./Install.	Chemical, ground application		40	Acre	\$4.57	\$182.80
Mobilization	Mobilization, medium equipment		2	Each	\$200.43	\$400.86

Total Cost: \$1,980.06

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$37.13	EQIP-HU	\$44.55
WHIP	\$37.13	WHIP-HU	\$44.55
EQIP-NOFEI	\$37.13	EQIP-HUNOFEI	\$44.55
EQIP-CCPI	\$37.13	EQIP-HUCCPI	\$44.55
EQIP-MRBI	\$37.13	EQIP-HUMRBI	\$44.55
WHIP-MRBI	\$37.13	WHIP-HUMRBI	\$44.55

**Practice: 490 - Tree & Shrub Site Preparation****Scenario # 2    Light Mechanical****Scenario Description:****Missouri**

This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems in order to improve site conditions for establishing trees and/or shrubs. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This following resource concerns: soil quality degradation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. Additional associated practices may include: 612 Tree and Shrub Establishment, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before Practice Situation:**

Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils are compacted as a result of harvesting heavy equipment activities or other land uses.

**After Practice Situation:**

Undesirable vegetation has been removed using a bush hog to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

**Scenario Feature Measure:**

Area of Treatment

**Scenario Typical Size:**

40

Acre

Tot Unit Cost

\$62.81

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Mower, Bush Hog	16	Hour	\$44.40	\$710.40
Equip./Install.	Tillage, Primary	40	Acre	\$15.60	\$624.00
Labor	Equipment Operators, Light	16	Hour	\$20.92	\$334.72
Mobilization	Mobilization, medium equipment	4	Each	\$200.43	\$801.72
Mobilization	Mobilization, Light Equipment Operator	2	Hour	\$20.73	\$41.46

Total Cost: \$2,512.30

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQUIP	\$47.11	EQUIP-HU	\$56.53
WHIP	\$47.11	WHIP-HU	\$56.53
EQUIP-NOFEI	\$47.11	EQUIP-HUNOFEI	\$56.53
EQUIP-CCPI	\$47.11	EQUIP-HUCCPI	\$56.53
EQUIP-MRBI	\$47.11	EQUIP-HUMRBI	\$56.53
WHIP-MRBI	\$47.11	WHIP-HUMRBI	\$56.53
EQUIP-NOI	\$47.11	EQUIP-HUNOI	\$56.53

**Practice: 490 - Tree & Shrub Site Preparation****Scenario # 3    Light Mechanical with Chemical****Scenario Description:****Missouri**

This practice involves the use of light/moderate machinery to clear above ground vegetation and to also rip/cut/lift underground root systems followed by appropriate herbicide application in order to improve site conditions for establishing trees and/or shrubs. Typical sites include small trees (<2" dbh) and brush cover on less than 60% of area that is not appropriate to the site or providing the desired condition for the landowner. Typical sites include abandoned fields, pastures, rangelands, agricultural fields or forestlands that have been harvested. This following resource concerns: soil quality degradation - compaction, soil erosion - sheet and rill, and degraded plant condition - undesirable plant productivity and health and inadequate structure and composition. Additional associated practices may include: 612 Tree and Shrub Establishment, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before Practice Situation:**

Undesirable vegetation is present on the site including herbaceous plants and sparse woody competition. Noxious and invasive species may also be present on the site. If left uncontrolled, undesirable vegetation will inhibit successful establishment of target species of trees and/or shrubs. Soils are compacted as a result of harvesting heavy equipment activities or other land uses.

**After Practice Situation:**

Undesirable vegetation has been removed using a bush hog to knock down stand vegetation and heavy tillage equipment is used to breakup and lift root systems, breakup plow pans (<18" deep), thus enhancing the conditions for planting and survival of trees and/or shrubs. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size of the practice is 40 acres.

**Scenario Feature Measure:**

Area of Treatment

**Scenario Typical Size:**

40

Acre

Tot Unit Cost

\$112.31

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Herbicide, Glyphosate	40	Acre	\$11.04	\$441.60
Materials	Herbicide, Sulfometuron & metsulfuron	40	Acre	\$22.78	\$911.20
Materials	Herbicide, Surfactant	40	Acre	\$1.09	\$43.60
Equip./Install.	Chemical, ground application	40	Acre	\$4.57	\$182.80
Equip./Install.	Mower, Bush Hog	16	Hour	\$44.40	\$710.40
Equip./Install.	Tillage, Primary	40	Acre	\$15.60	\$624.00
Labor	Equipment Operators, Light	16	Hour	\$20.92	\$334.72
Mobilization	Mobilization, medium equipment	6	Each	\$200.43	\$1,202.58
Mobilization	Mobilization, Light Equipment Operator	2	Hour	\$20.73	\$41.46

Total Cost: \$4,492.36

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQUIP	\$84.23	EQUIP-HU	\$101.08
WHIP	\$84.23	WHIP-HU	\$101.08
EQUIP-NOFEI	\$84.23	EQUIP-HUNOFEI	\$101.08
EQUIP-CCPI	\$84.23	EQUIP-HUCCPI	\$101.08
EQUIP-MRBI	\$84.23	EQUIP-HUMRBI	\$101.08
WHIP-MRBI	\$84.23	WHIP-HUMRBI	\$101.08
EQUIP-NOI	\$84.23	EQUIP-HUNOI	\$101.08

**Practice: 490 - Tree & Shrub Site Preparation****Scenario # 4 Heavy Mechanical with Chemical****Scenario Description:****Missouri**

This practice involves the use of heavy machinery combined with appropriate herbicide application to treat an area in order to improve site conditions for establishing trees and/or shrubs. Typical sites include large trees(>2"dbh) and brush cover on 60% of area that is not appropriate to the site or providing the desired condition for the landowner. This practice is typically used to address the following resource concerns: degraded plant condition - undesirable plant productivity and health and inadequate structure and composition and soil quality degradation - soil erosion - sheet and rill. Additional associated practices may include: 612 Tree and Shrub Establishment, 315 Herbaceous Weed Control, 660 Tree/Shrub Pruning, 484 Mulching

**Before Practice Situation:**

The site is dominated by undesirable vegetation including herbaceous plants and significant amounts of woody vegetation (trees and brush) occupying the site. There is also a significant component of woody debris onsite. Noxious and invasive species may also be present on the site. Soils are compacted as a result of past heavy equipment activities or from other land uses. Sheet and rill erosion is occurring in areas where the soil was severely disturbed exposing bare soil. If left untreated, soil compaction and erosion issues will result in poor survival or reduced growth of trees/shrubs to be established on the site.

**After Practice Situation:**

Undesirable vegetation has been removed using mechanical methods reducing competition for target trees and/or shrubs. Woody debris has been removed to facilitate tree/shrub planting operations. Soil compaction has been alleviated, allowing penetration of moisture and allowing roots to grow properly. Site conditions are favorable for successful establishment of trees and/or shrubs. The typical size is 40 acres.

**Scenario Feature Measure:**

Area of Treatment

**Scenario Typical Size:**

40

Acre

Tot Unit Cost

\$251.55

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Herbicide, Glyphosate	40	Acre	\$11.04	\$441.60
Materials	Herbicide, Sulfometuron & metsulfuron	40	Acre	\$22.78	\$911.20
Materials	Herbicide, Surfactant	40	Acre	\$1.09	\$43.60
Equip./Install.	Chemical, ground application	40	Acre	\$4.57	\$182.80
Equip./Install.	Heavy mechanical site prep, raking	24	Acre	\$147.74	\$3,545.76
Equip./Install.	Heavy mechanical site prep, shearing, V-blade,	24	Acre	\$147.74	\$3,545.76
Labor	Supervisor or Manager	8	Hour	\$37.21	\$297.68
Labor	General Labor	8	Hour	\$21.56	\$172.48
Mobilization	Mobilization, large equipment	2	Each	\$374.89	\$749.78
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, Heavy Equipment Operator	2	Hour	\$26.97	\$53.94
Mobilization	Mobilization, Supervisor or Manager	2	Hour	\$36.87	\$73.74

Total Cost: \$10,061.96

**Payment types:**

PayType	Unit Payment	PayType	Unit Payment
EQUIP	\$188.66	EQUIP-HU	\$226.39
WHIP	\$188.66	WHIP-HU	\$226.39
EQUIP-NOFEI	\$188.66	EQUIP-HUNOFEI	\$226.39
EQUIP-CCPI	\$188.66	EQUIP-HUCCPI	\$226.39
EQUIP-MRBI	\$188.66	EQUIP-HUMRBI	\$226.39
WHIP-MRBI	\$188.66	WHIP-HUMRBI	\$226.39
EQUIP-NOI	\$188.66	EQUIP-HUNOI	\$226.39

